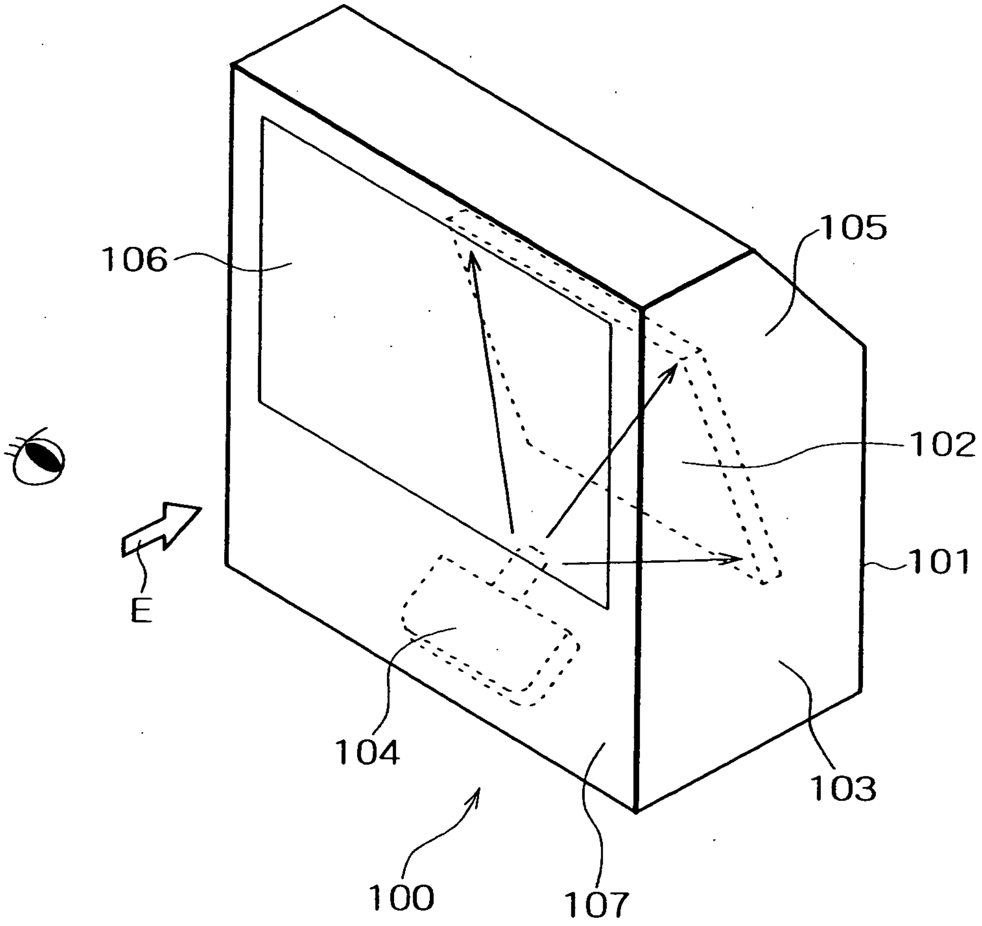
S02P0194

FIG. 1



F I G. 2

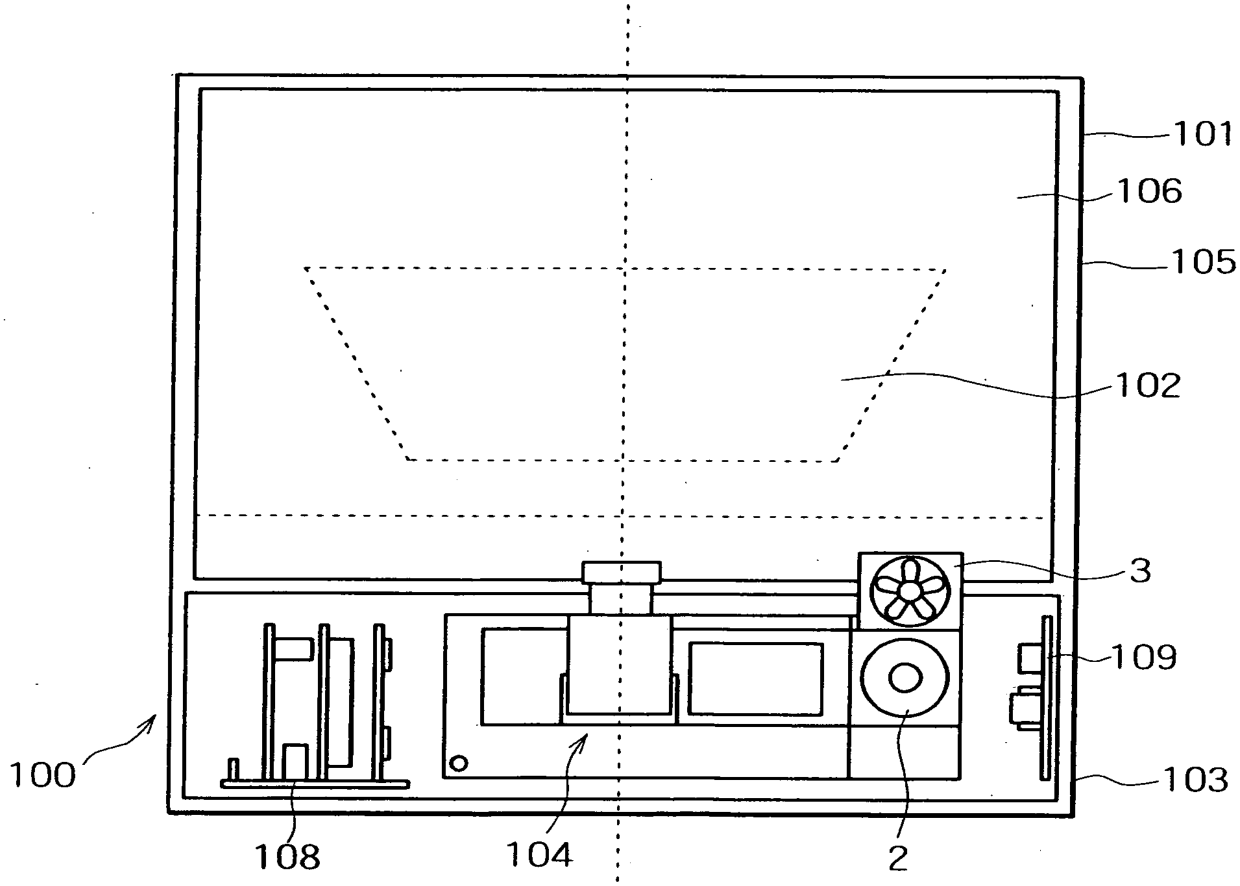


FIG.3

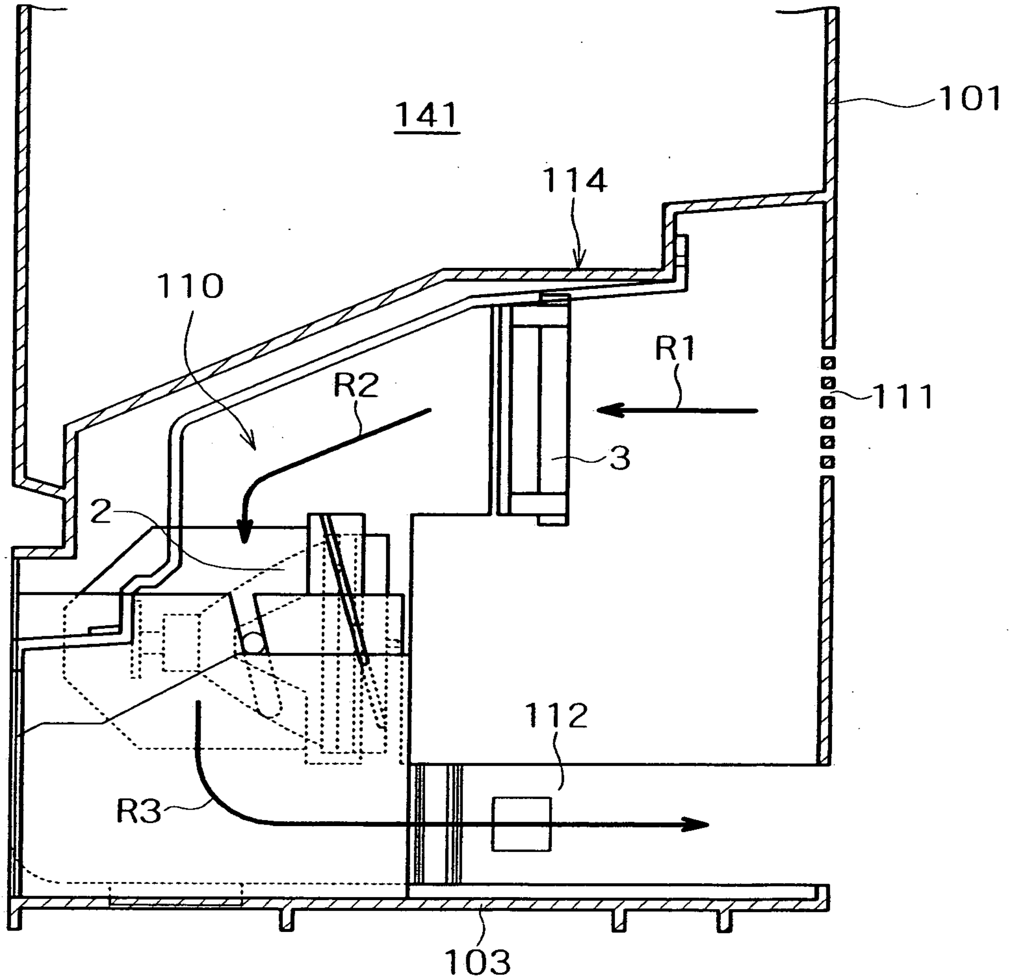
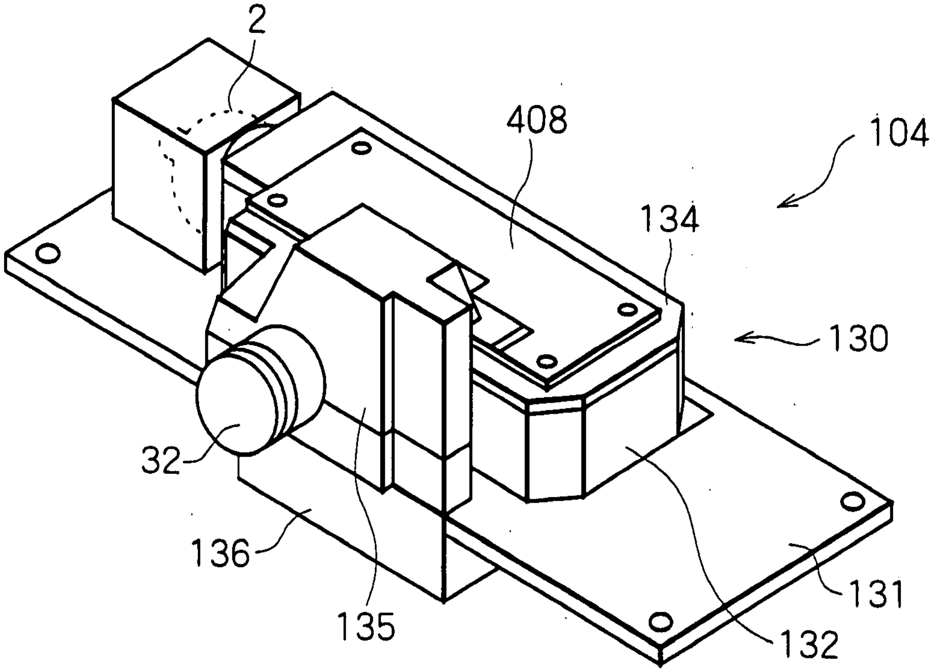


FIG. 4



F I G. 5

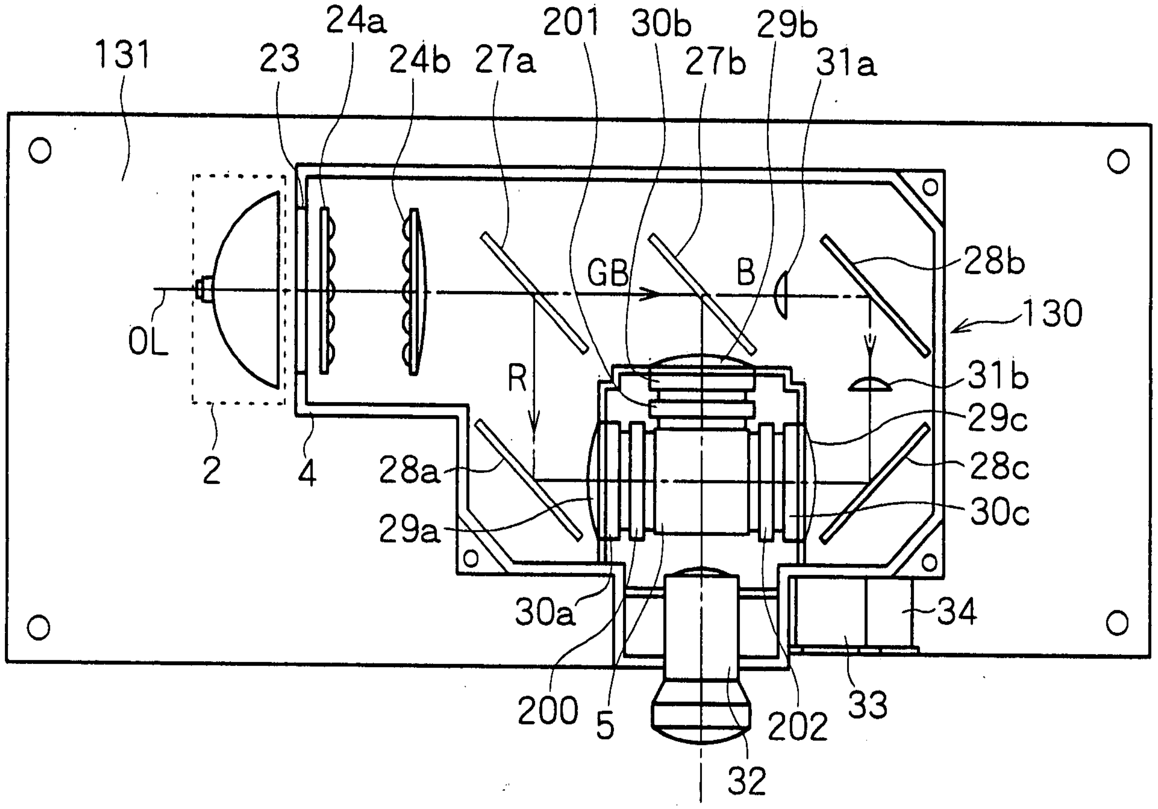
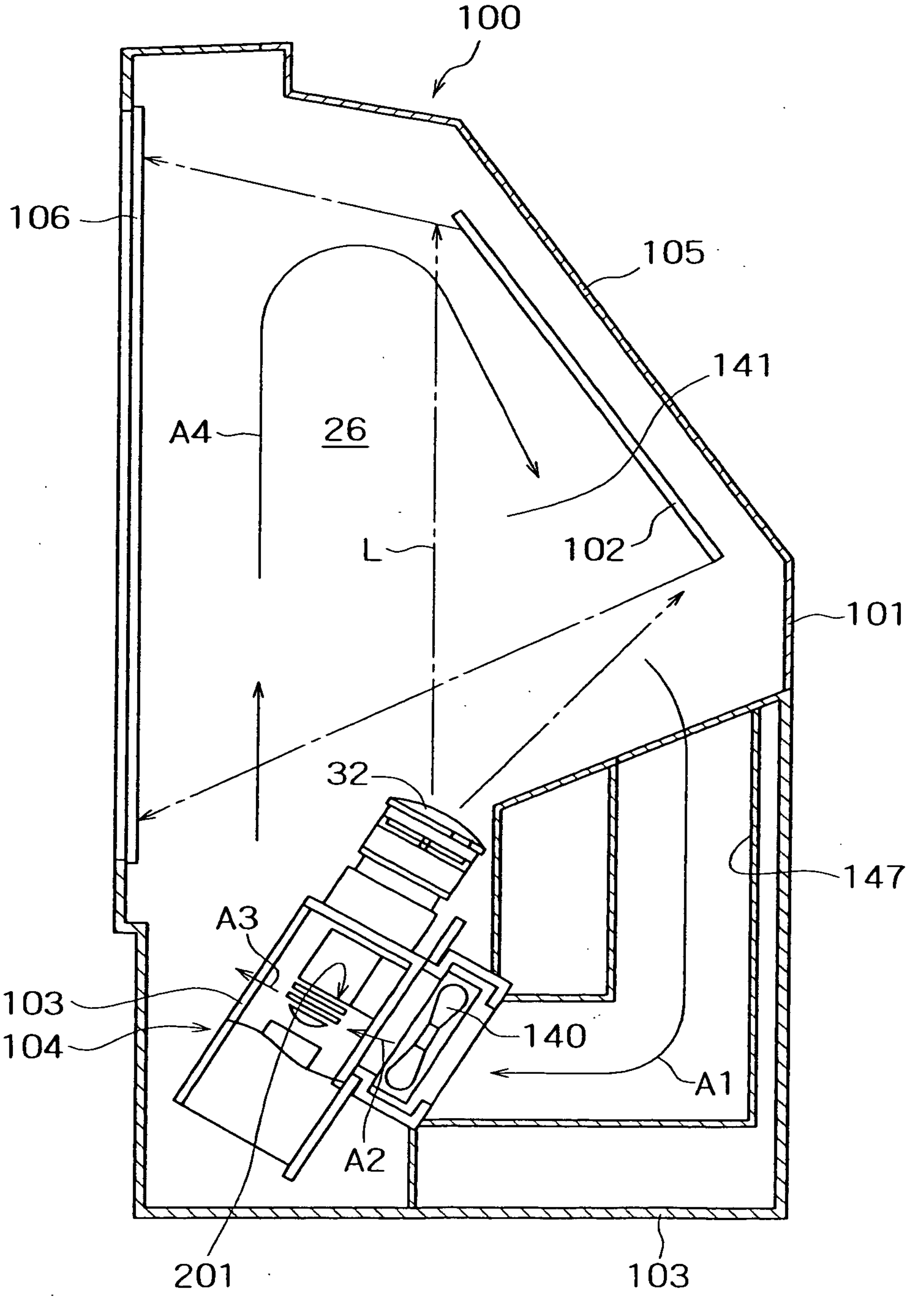

131
23
24a
24b
27a
201
30b
27b
29b
31a
GB
B
28b
130
OL
R
31b
29c
28c
30c
2
4
28a
29a
30a
200
5
202
33
34
32

FIG.6



F I G. 7

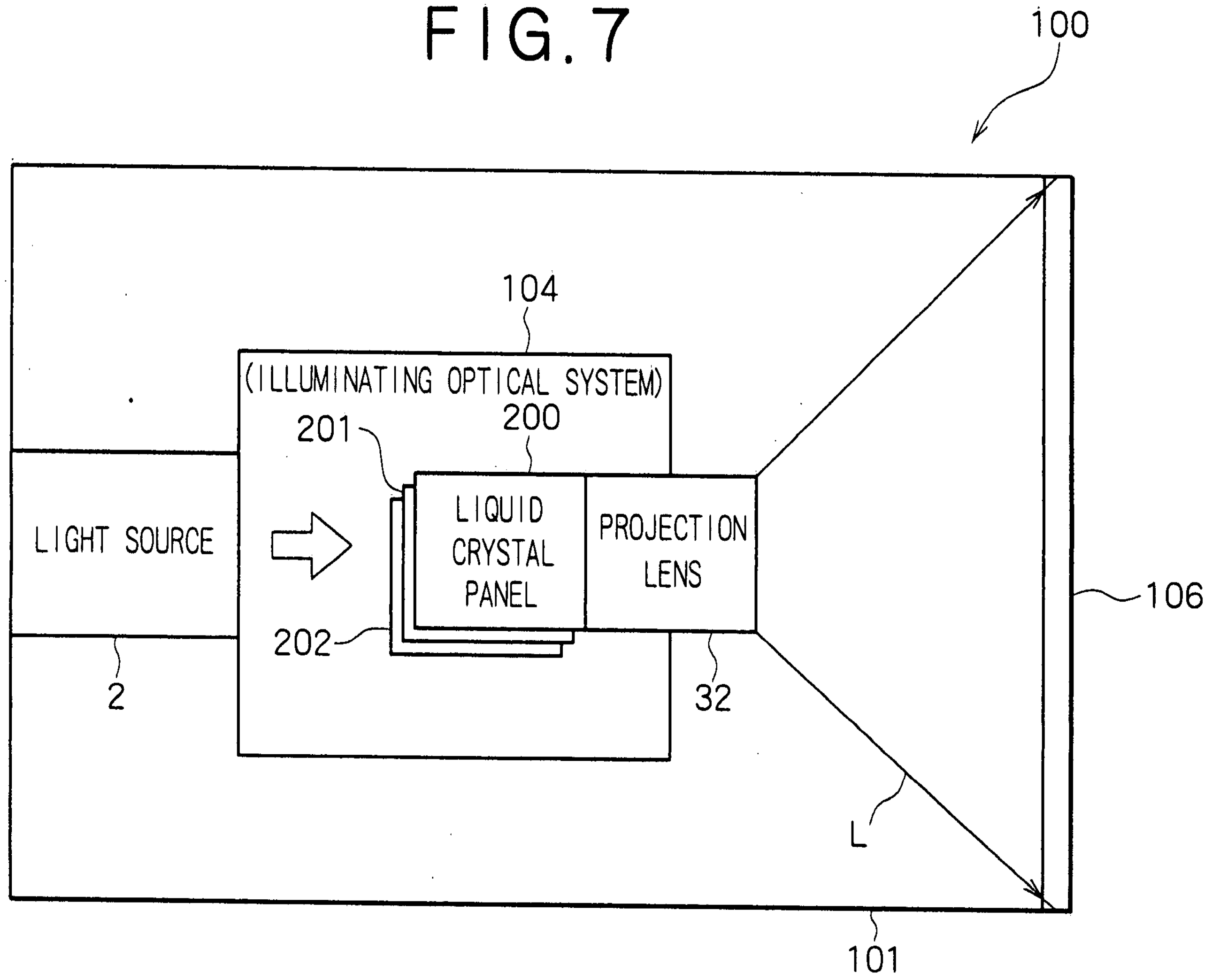

100
104
(ILLUMINATING OPTICAL SYSTEM)
201
200
LIGHT SOURCE
LIQUID CRYSTAL PANEL
PROJECTION LENS
106
202
2
32
L
101

FIG. 8

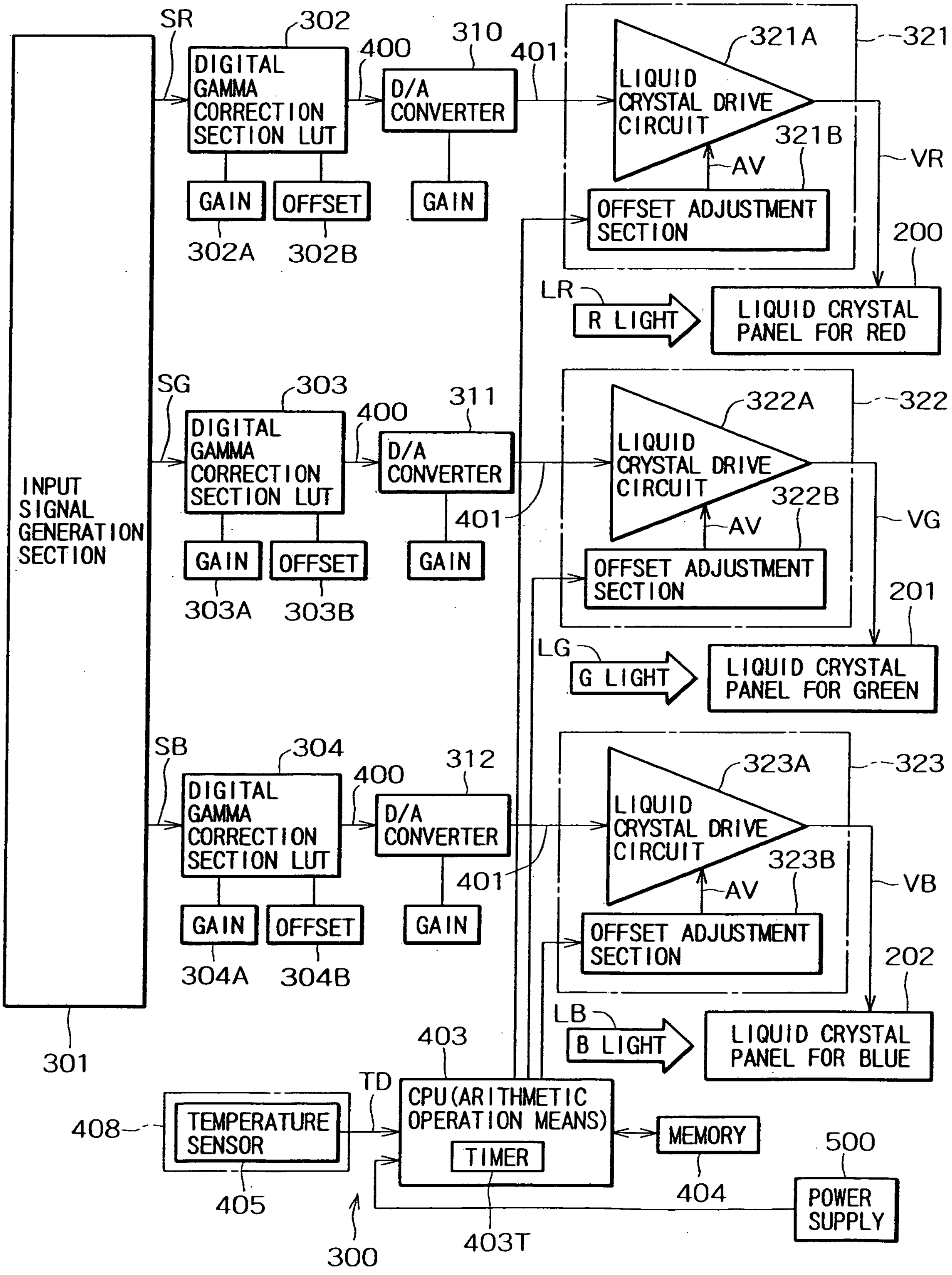
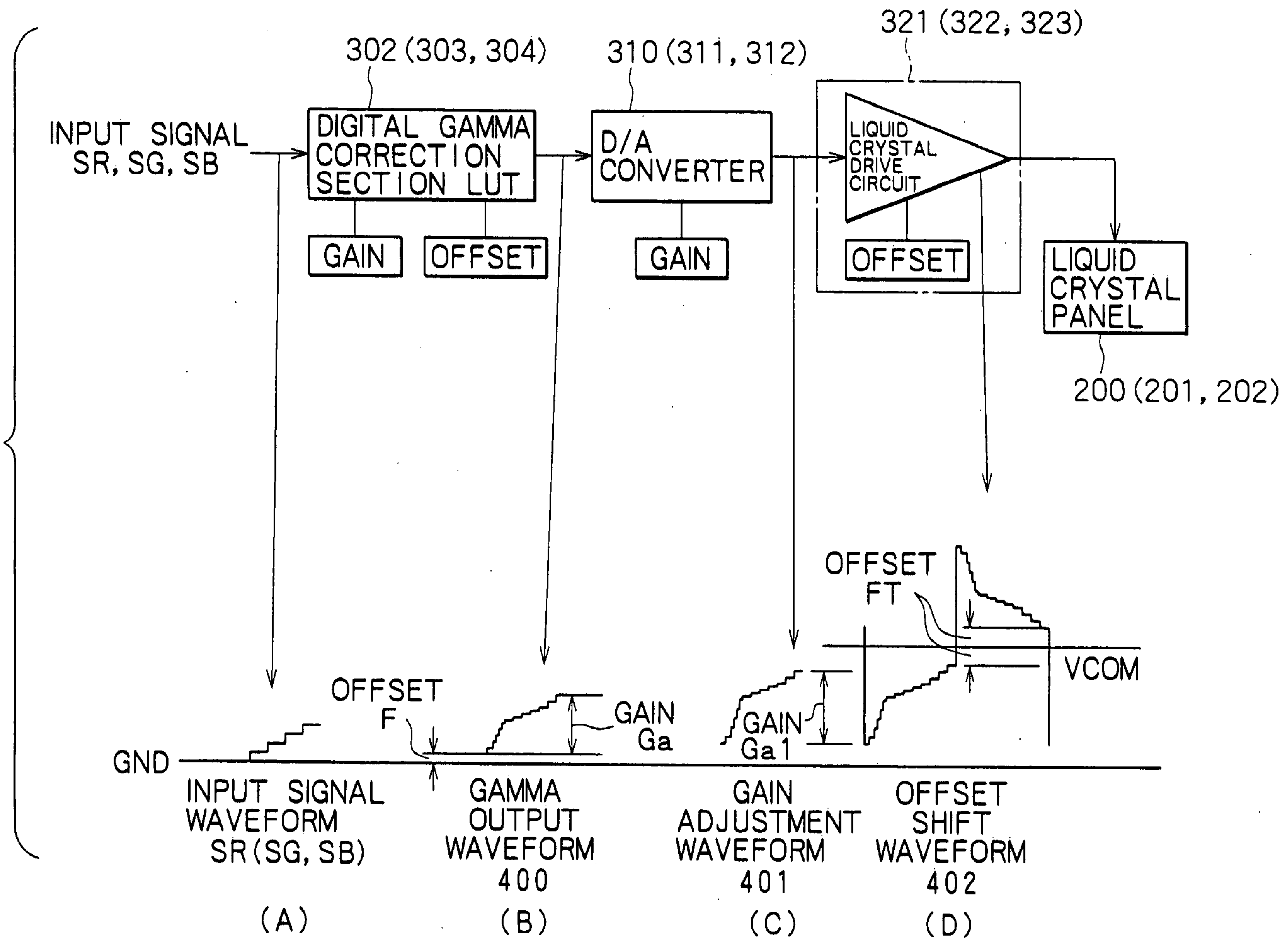

SR
302
DIGITAL GAMMA CORRECTION SECTION LUT
400
310
D/A CONVERTER
401
LIQUID CRYSTAL DRIVE CIRCUIT
321A
321
321B
AV
VR
GAIN
OFFSET
GAIN
302A
302B
OFFSET ADJUSTMENT SECTION
200
LR
R LIGHT
LIQUID CRYSTAL PANEL FOR RED
SG
303
DIGITAL GAMMA CORRECTION SECTION LUT
400
311
D/A CONVERTER
322A
322
LIQUID CRYSTAL DRIVE CIRCUIT
322B
401
AV
VG
INPUT SIGNAL GENERATION SECTION
GAIN
OFFSET
GAIN
OFFSET ADJUSTMENT SECTION
303A
303B
201
LG
G LIGHT
LIQUID CRYSTAL PANEL FOR GREEN
SB
304
DIGITAL GAMMA CORRECTION SECTION LUT
400
312
D/A CONVERTER
323A
323
LIQUID CRYSTAL DRIVE CIRCUIT
323B
401
AV
VB
GAIN
OFFSET
GAIN
OFFSET ADJUSTMENT SECTION
304A
304B
202
LB
B LIGHT
LIQUID CRYSTAL PANEL FOR BLUE
301
403
TD
408
TEMPERATURE SENSOR
CPU (ARITHMETIC OPERATION MEANS)
TIMER
MEMORY
500
POWER SUPPLY
405
404
300
403T

FIG. 9



302 (303, 304)
310 (311, 312)
321 (322, 323)
INPUT SIGNAL SR, SG, SB
DIGITAL GAMMA CORRECTION SECTION LUT
GAIN
OFFSET
D/A CONVERTER
GAIN
LIQUID CRYSTAL DRIVE CIRCUIT
OFFSET
LIQUID CRYSTAL PANEL
200 (201, 202)
OFFSET FT
VCOM
OFFSET F
GAIN Ga
GAIN Ga1
GND
INPUT SIGNAL WAVEFORM SR (SG, SB)
GAMMA OUTPUT WAVEFORM 400
GAIN ADJUSTMENT WAVEFORM 401
OFFSET SHIFT WAVEFORM 402
(A)
(B)
(C)
(D)

FIG. 10A

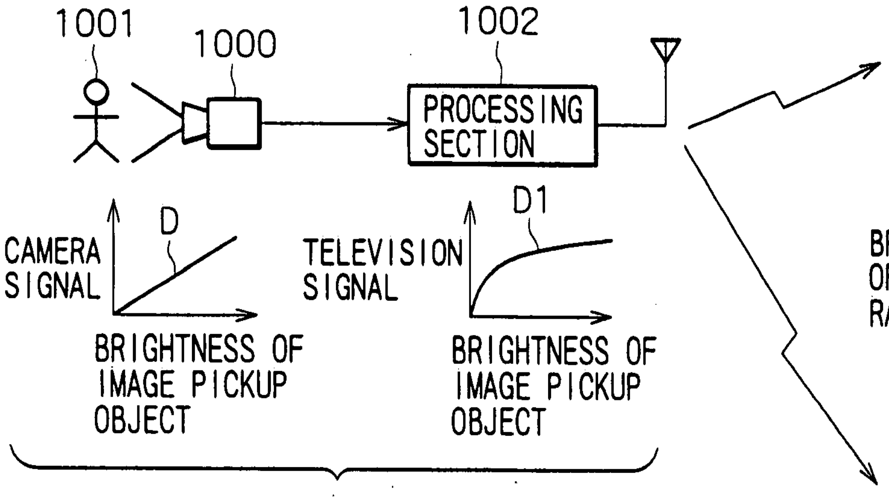


FIG. 10B

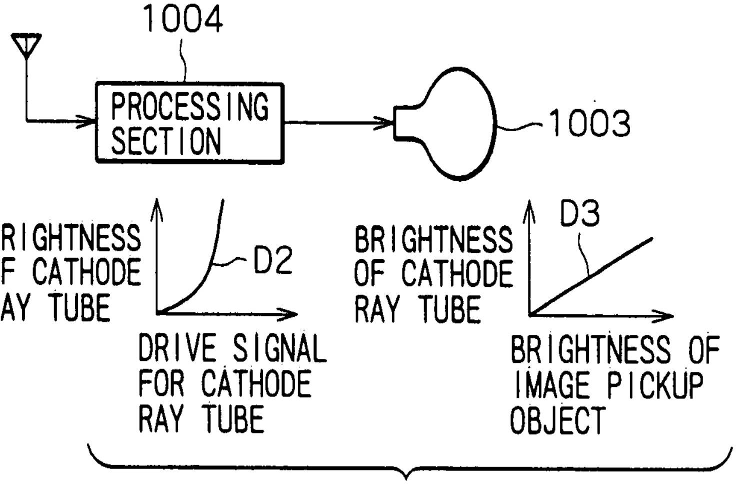


FIG. 10C

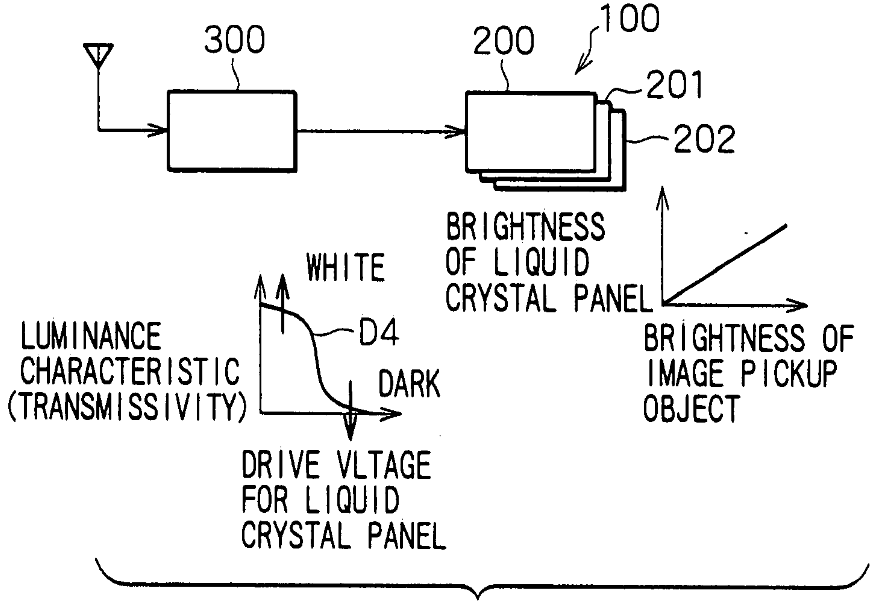
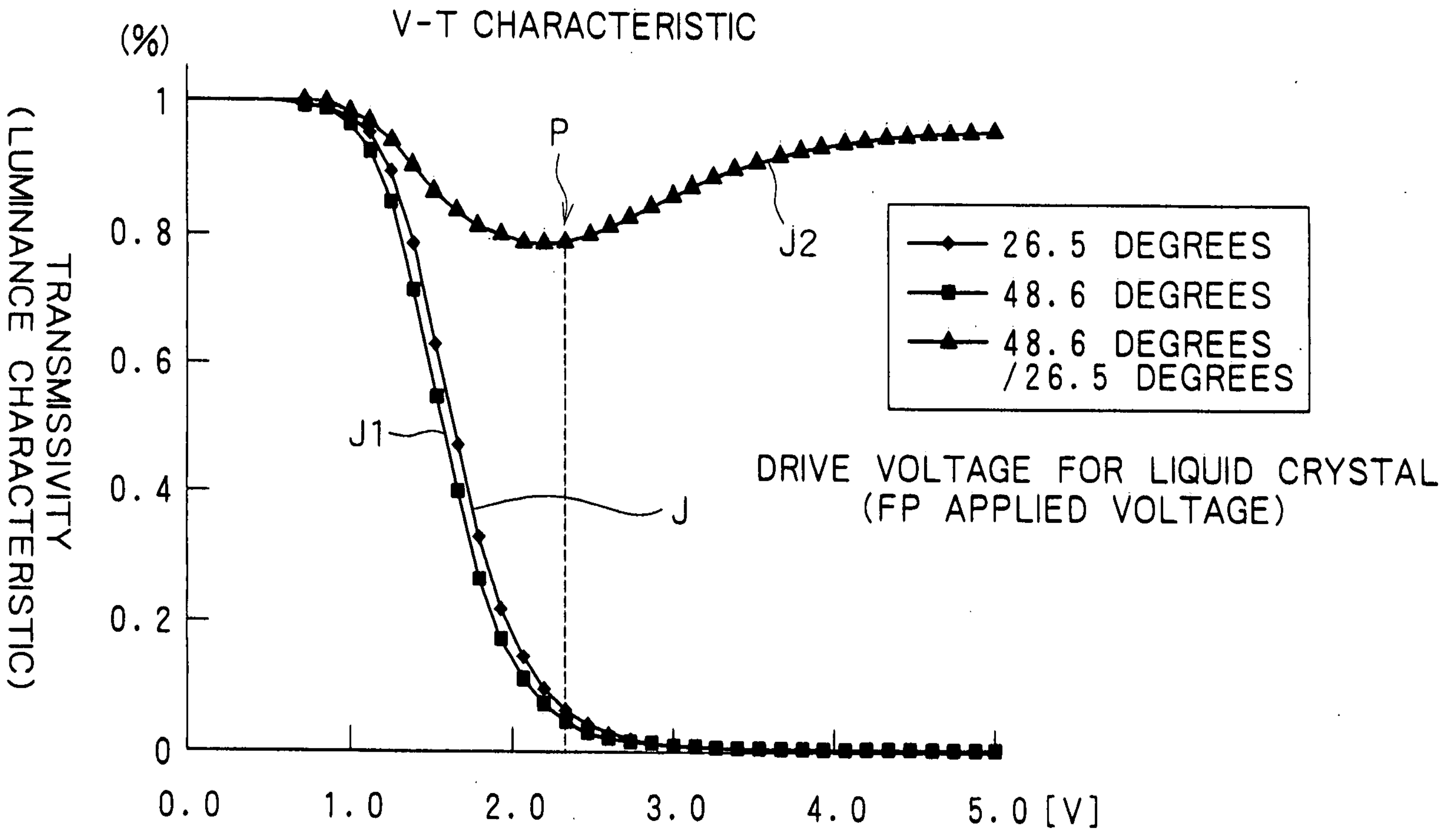


FIG.11


V-T CHARACTERISTIC
(%)
TRANSMISSIVITY
(LUMINANCE CHARACTERISTIC)
1
0.8
0.6
0.4
0.2
0
0.0
1.0
2.0
3.0
4.0
5.0 [V]
P
J1
J2
J
26.5 DEGREES
48.6 DEGREES
48.6 DEGREES /26.5 DEGREES
DRIVE VOLTAGE FOR LIQUID CRYSTAL
(FP APPLIED VOLTAGE)

F I G. 1 2

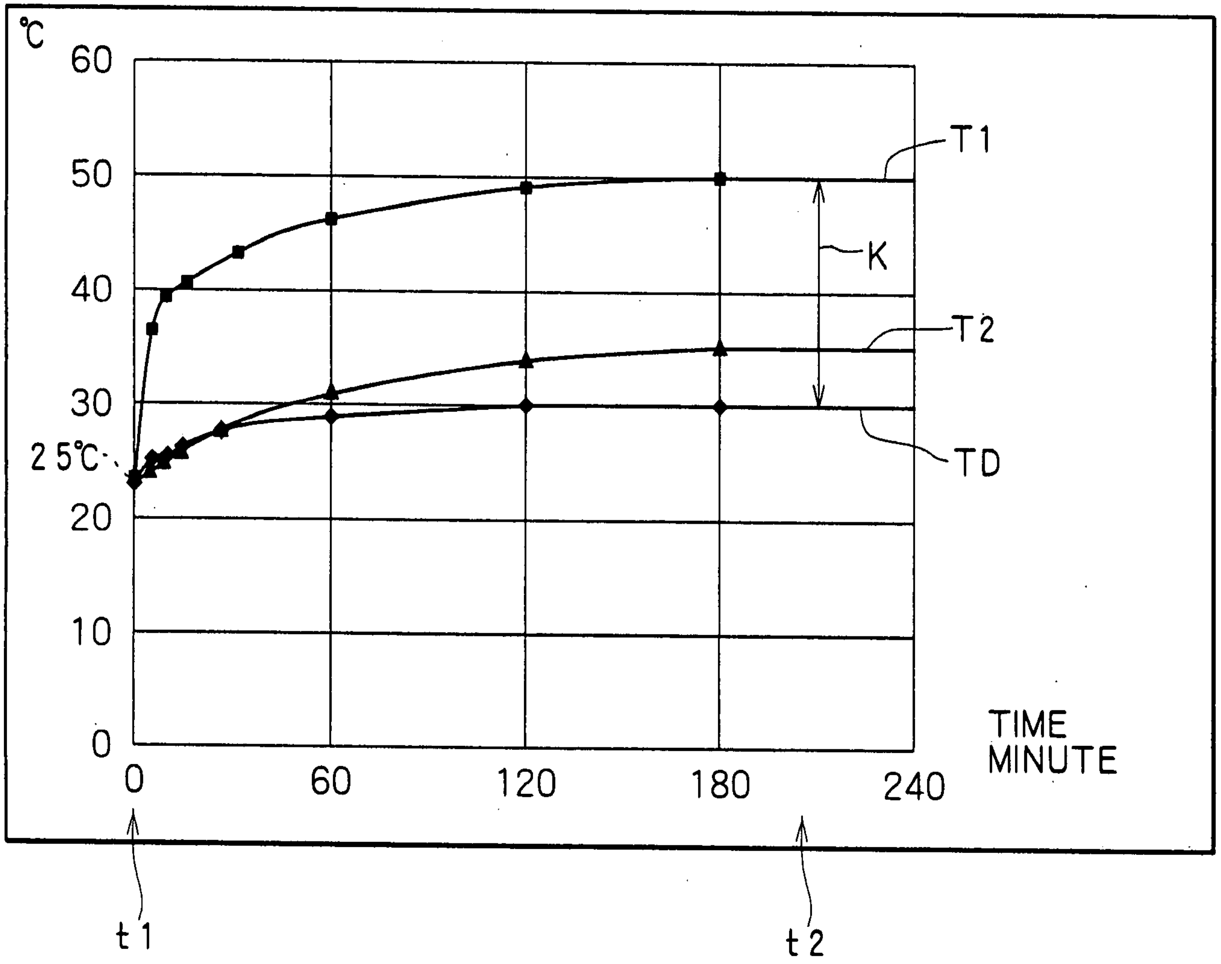


FIG. 13

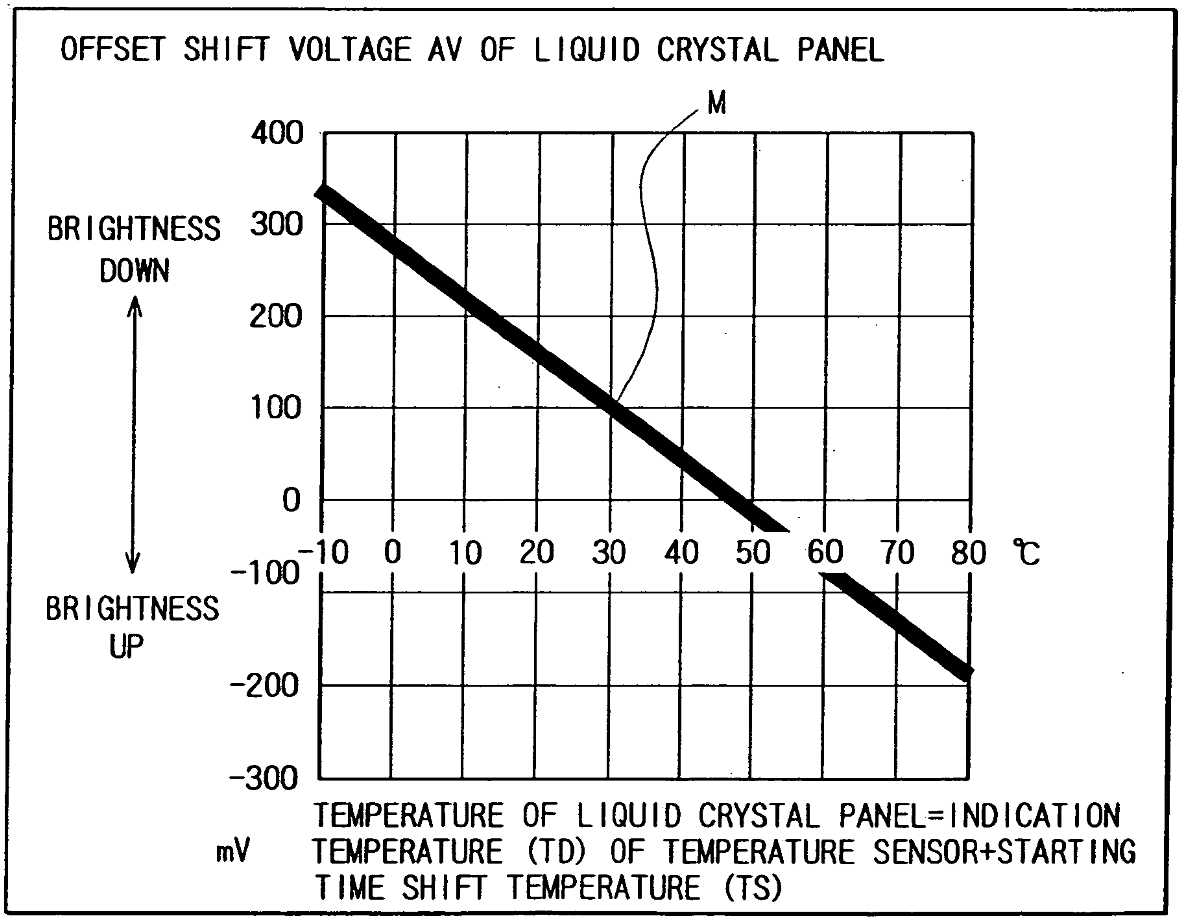
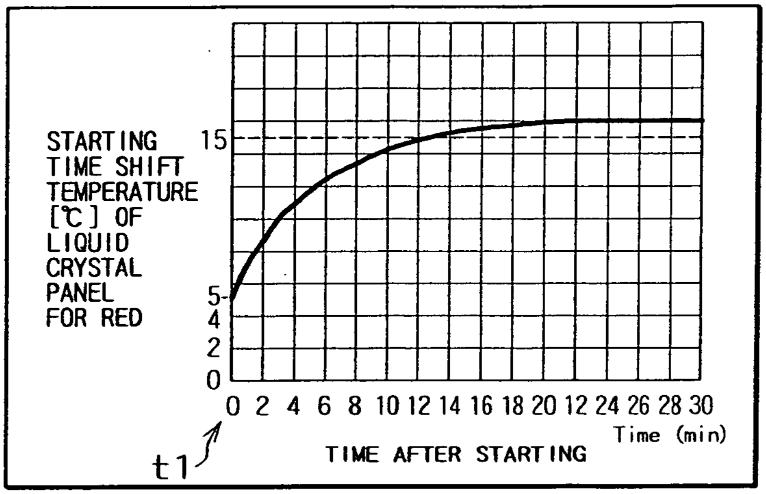
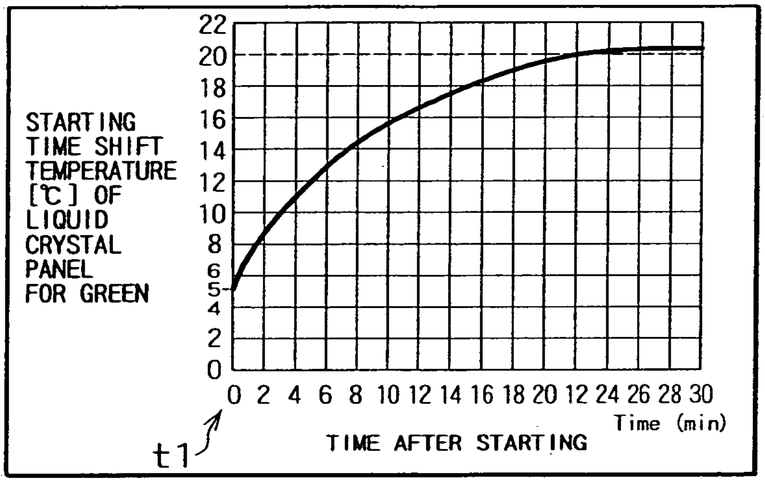

OFFSET SHIFT VOLTAGE AV OF LIQUID CRYSTAL PANEL
M
400
300
200
100
0
-100
-200
-300
mV
BRIGHTNESS DOWN
BRIGHTNESS UP
-10
0
10
20
30
40
50
60
70
80
℃
TEMPERATURE OF LIQUID CRYSTAL PANEL=INDICATION TEMPERATURE (TD) OF TEMPERATURE SENSOR+STARTING TIME SHIFT TEMPERATURE (TS)

FIG.14A



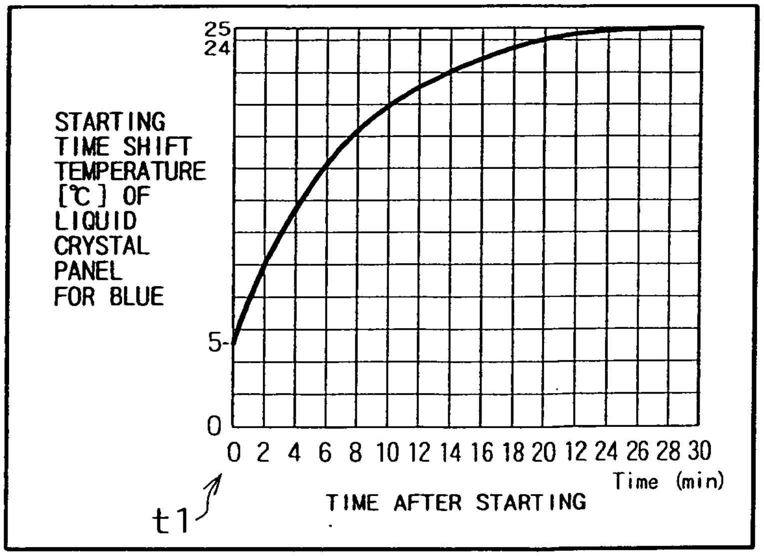
DATA OF STARTING TIME SHIFT TEMPERATURE (TS) (FOR RED)

FIG.14B



DATA OF STARTING TIME SHIFT TEMPERATURE (TS) (FOR GREEN)

FIG.14C



DATA OF STARTING TIME SHIFT TEMPERATURE (TS) (FOR BLUE)

FIG. 15

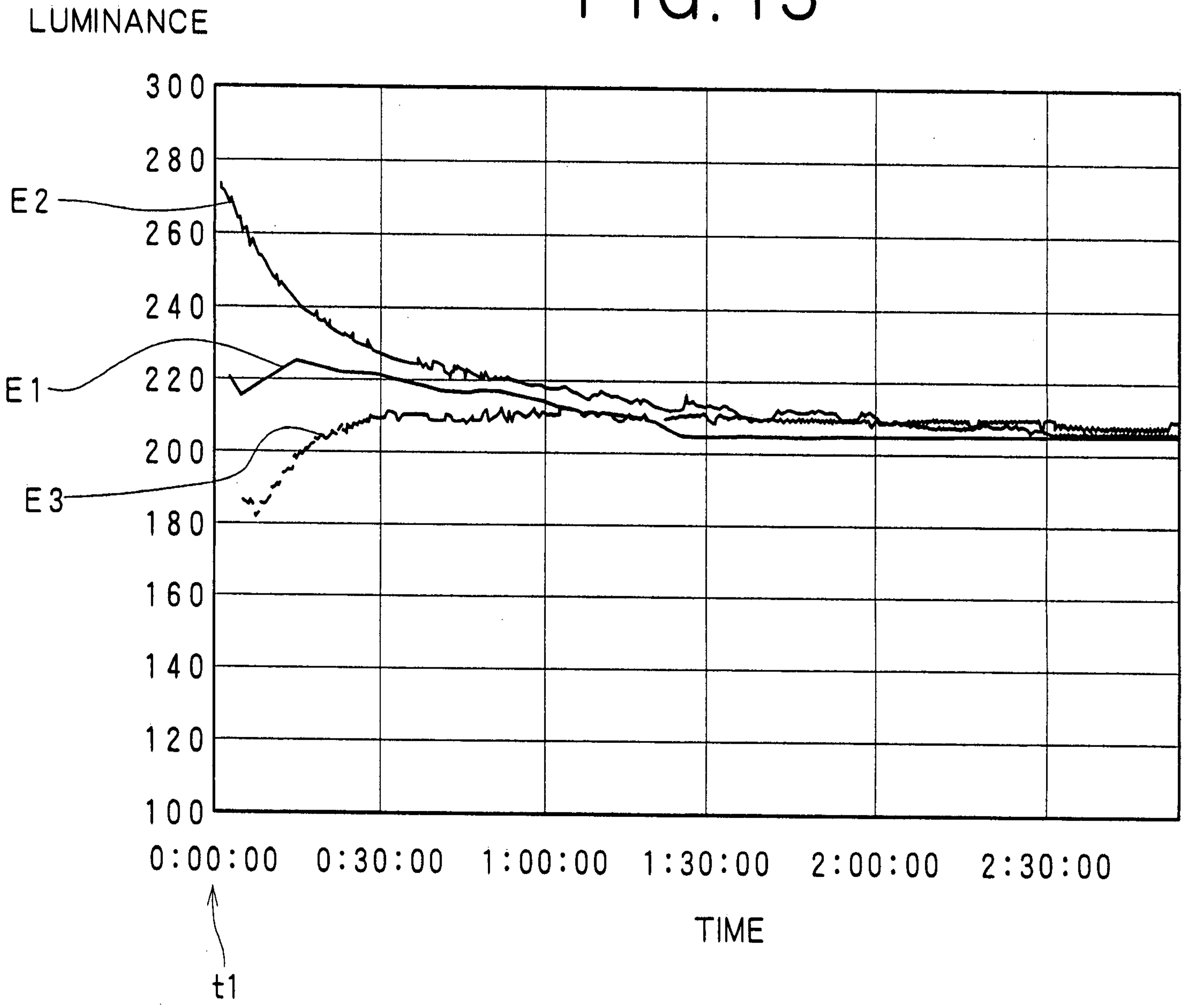

LUMINANCE
300
280
260
240
220
200
180
160
140
120
100
E2
E1
E3
0:00:00
0:30:00
1:00:00
1:30:00
2:00:00
2:30:00
TIME
t1

FIG.16

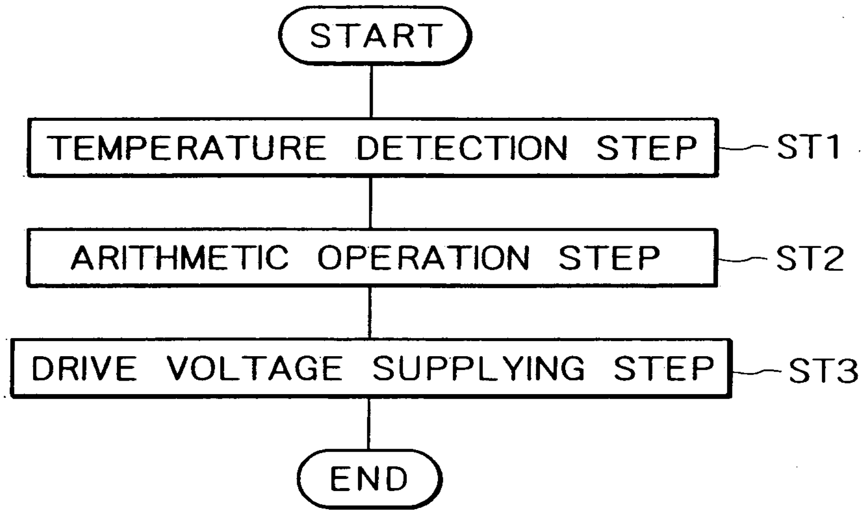

START
TEMPERATURE DETECTION STEP
ST1
ARITHMETIC OPERATION STEP
ST2
DRIVE VOLTAGE SUPPLYING STEP
ST3
END

FIG. 17

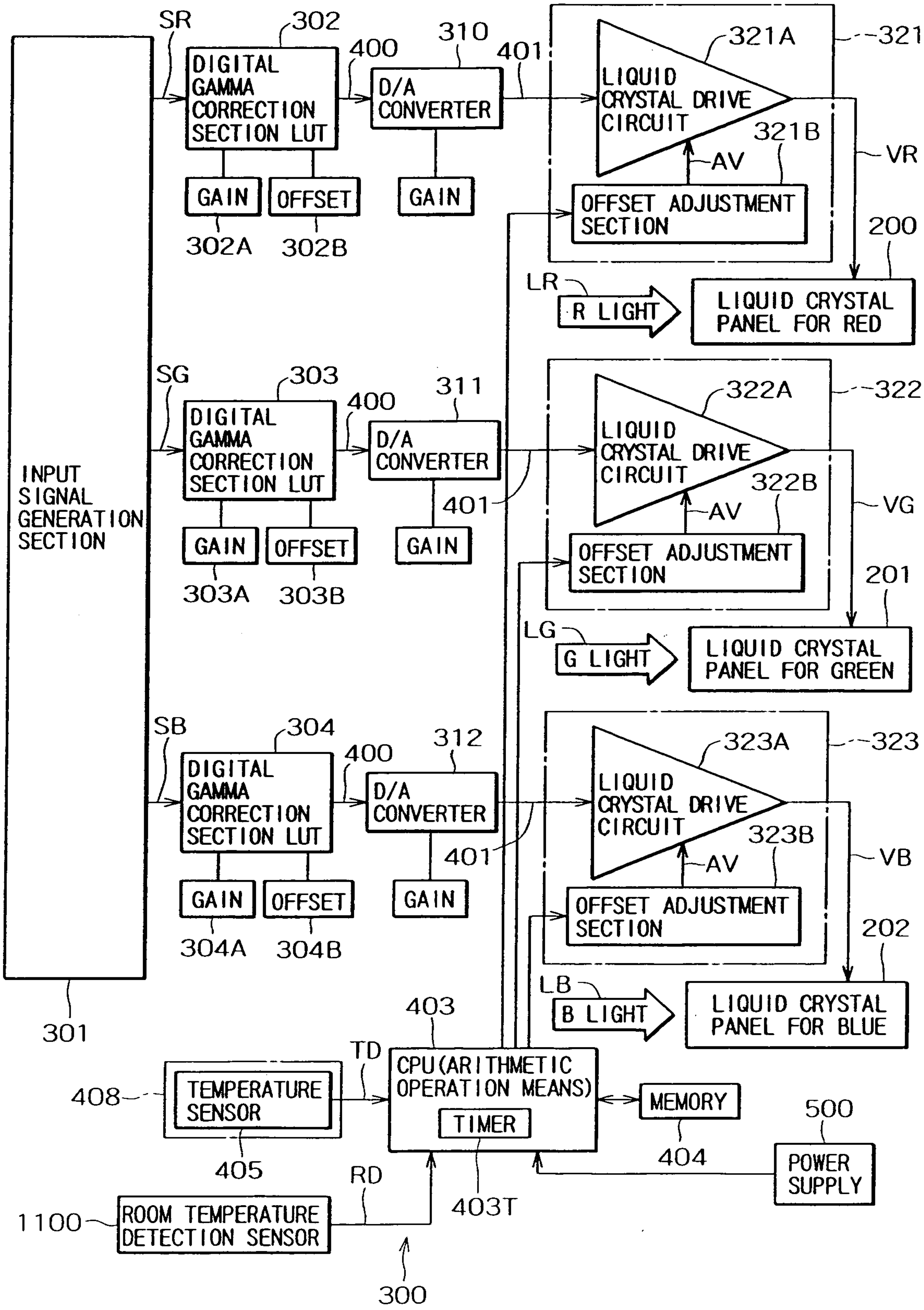
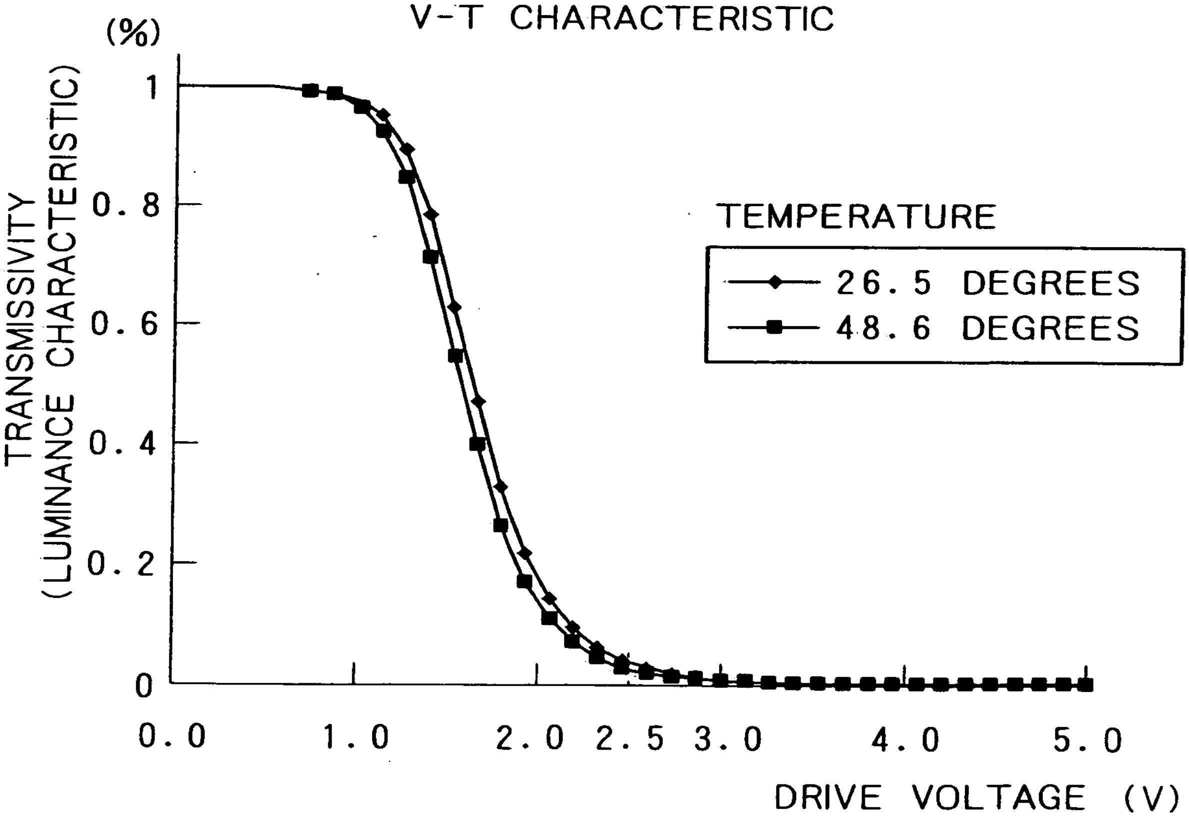

SR
302
DIGITAL GAMMA CORRECTION SECTION LUT
400
310
D/A CONVERTER
401
321A
LIQUID CRYSTAL DRIVE CIRCUIT
321
321B
AV
VR
GAIN
OFFSET
GAIN
OFFSET ADJUSTMENT SECTION
302A
302B
200
LR
R LIGHT
LIQUID CRYSTAL PANEL FOR RED
SG
303
DIGITAL GAMMA CORRECTION SECTION LUT
400
311
D/A CONVERTER
322A
LIQUID CRYSTAL DRIVE CIRCUIT
322
322B
INPUT SIGNAL GENERATION SECTION
401
AV
VG
GAIN
OFFSET
GAIN
OFFSET ADJUSTMENT SECTION
303A
303B
201
LG
G LIGHT
LIQUID CRYSTAL PANEL FOR GREEN
SB
304
DIGITAL GAMMA CORRECTION SECTION LUT
400
312
D/A CONVERTER
323A
LIQUID CRYSTAL DRIVE CIRCUIT
323
323B
401
AV
VB
GAIN
OFFSET
GAIN
OFFSET ADJUSTMENT SECTION
304A
304B
202
301
LB
B LIGHT
LIQUID CRYSTAL PANEL FOR BLUE
403
TD
CPU (ARITHMETIC OPERATION MEANS)
TIMER
408
TEMPERATURE SENSOR
MEMORY
500
405
404
POWER SUPPLY
RD
403T
1100
ROOM TEMPERATURE DETECTION SENSOR
300

FIG.18


V-T CHARACTERISTIC
(%)
TRANSMISSIVITY
(LUMINANCE CHARACTERISTIC)
1
0.8
0.6
0.4
0.2
0
0.0
1.0
2.0
2.5
3.0
4.0
5.0
DRIVE VOLTAGE (V)
TEMPERATURE
26.5 DEGREES
48.6 DEGREES